BEST AVAILABLE COPY

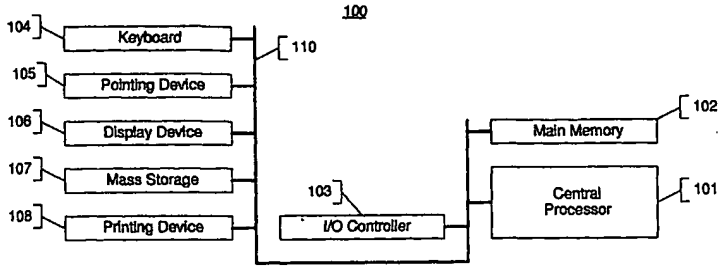

Fig. 1A

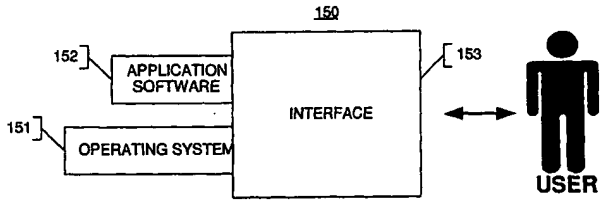

Fig. 1B

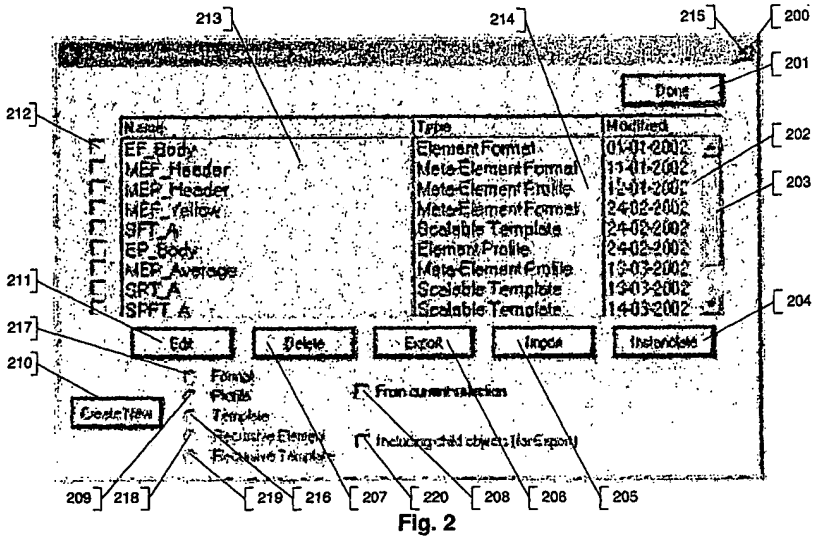

Fig. 2

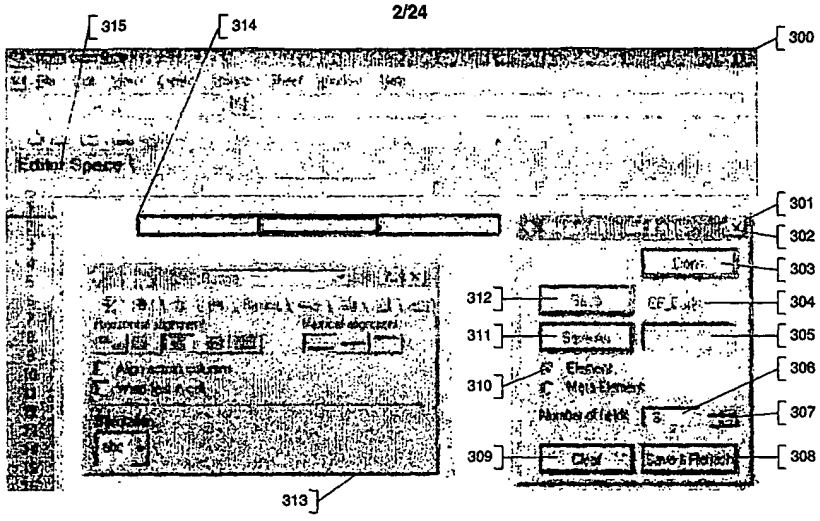
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Fig. 3

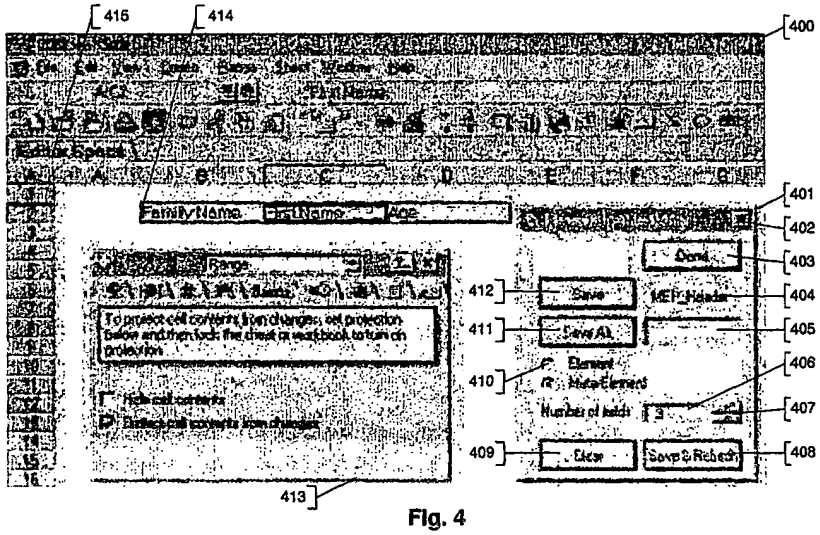
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Fig. 4

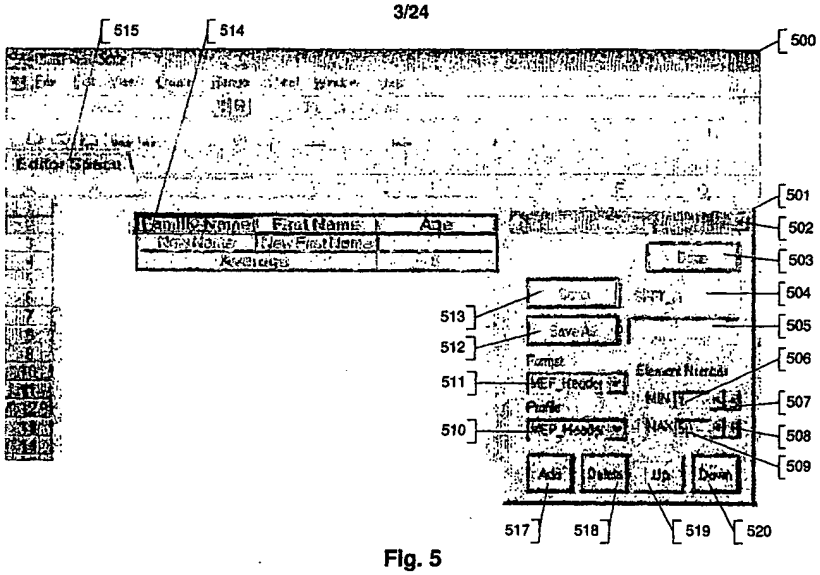

515
514
500
Editor Space
Family Name
First Name
Age
New Name
New First Name
Average
501
502
503
504
505
506
507
508
509
513
512
511
510
Save
Save As
Format
Element Number
MIN
MAX
Add
Delete
Up
Down
517
518
519
520

Fig. 5

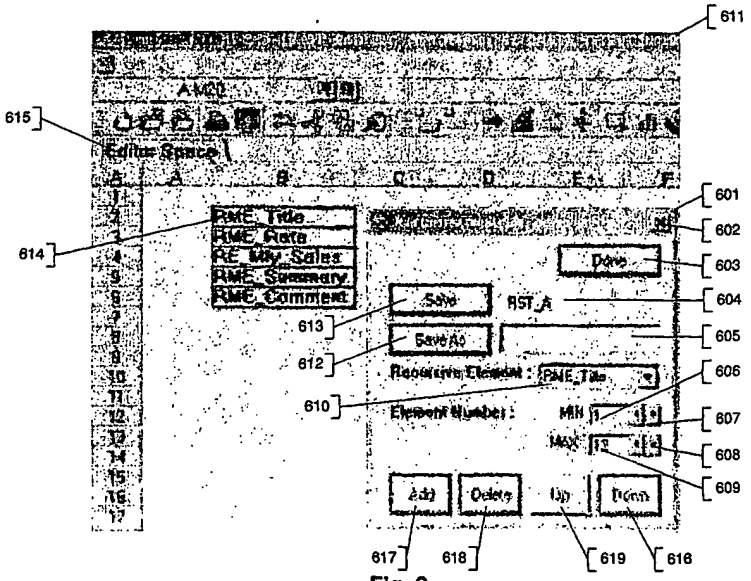

611
615
Editor Space
RME_Title
RME_Data
RE_My_Sales
RME_Summary
RME_Comment
614
601
602
603
604
605
606
607
608
609
613
612
610
Save
Save As
RST_A
Done
Receiving Element :
Element Number :
MIN
MAX
Add
Delete
Up
Down
617
618
619
616

Fig. 6

Fig. 7A

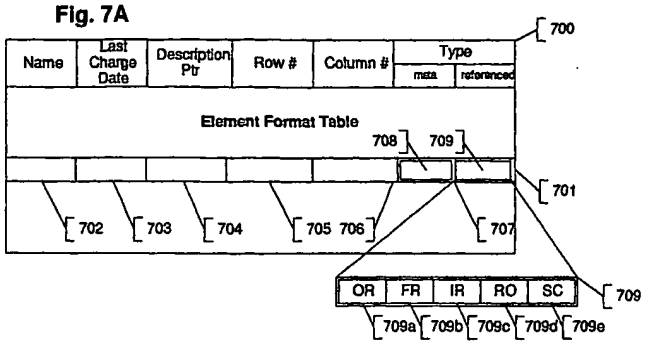


Fig. 7B

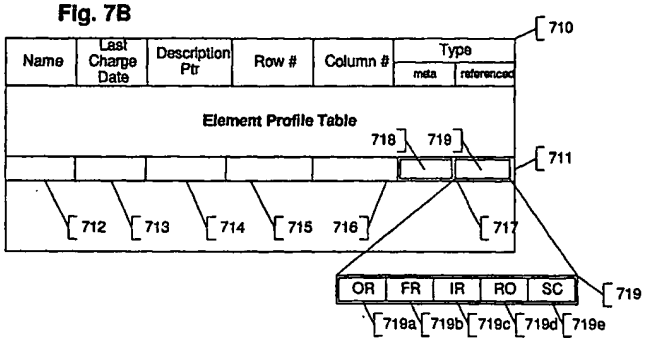


Fig. 7C

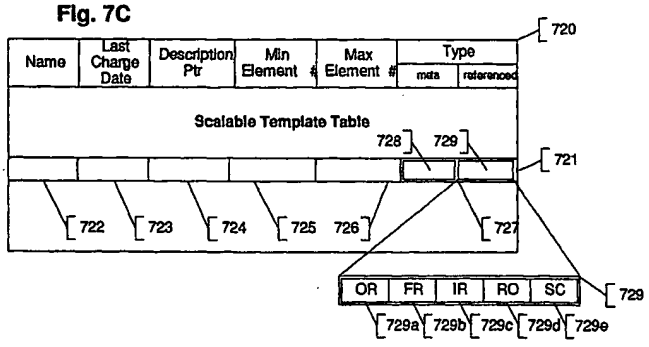


Fig. 7D

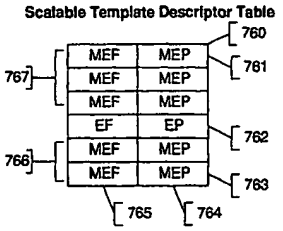


Fig. 7E

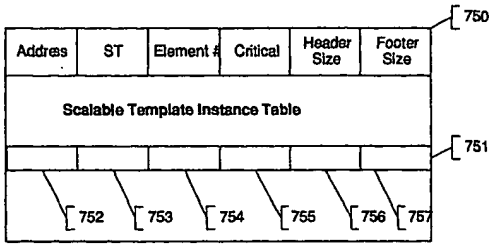
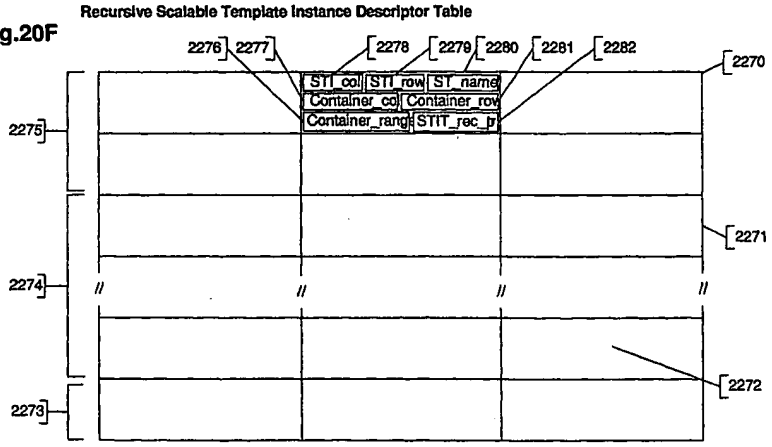


Fig.20F



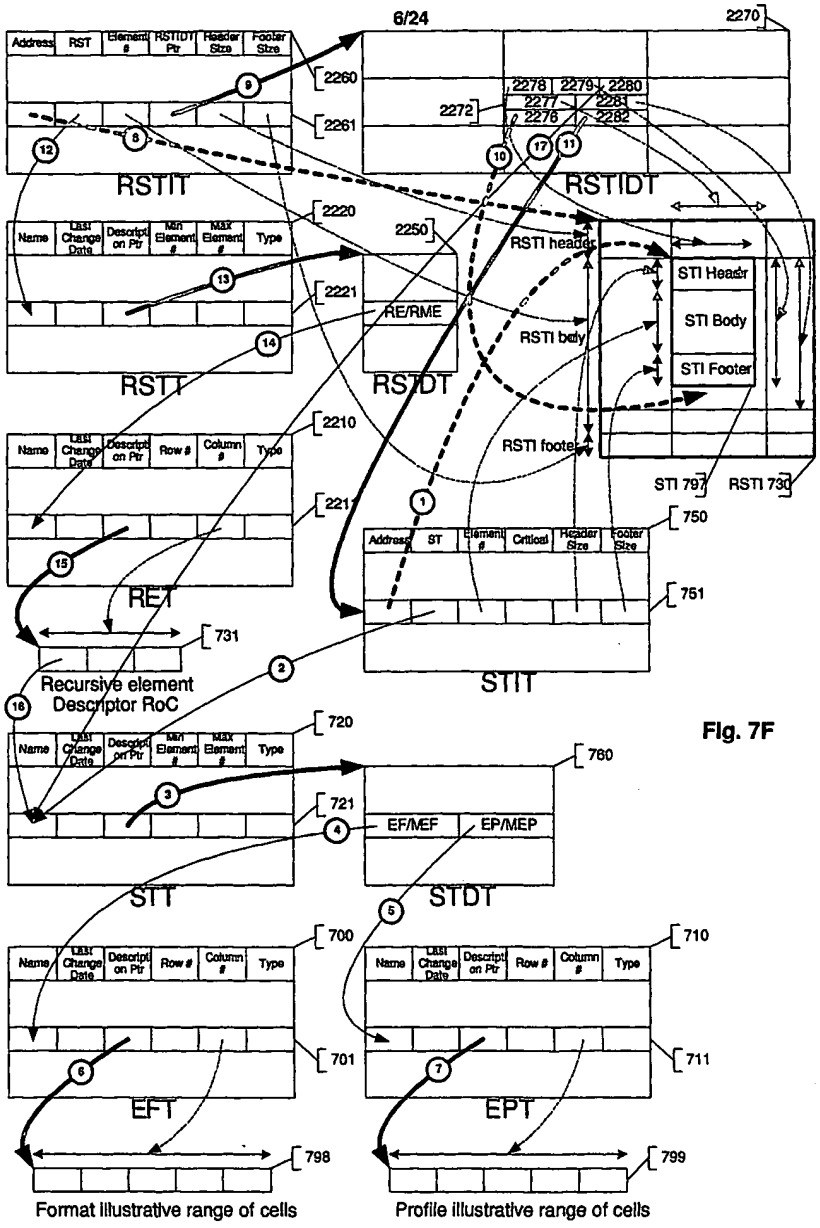
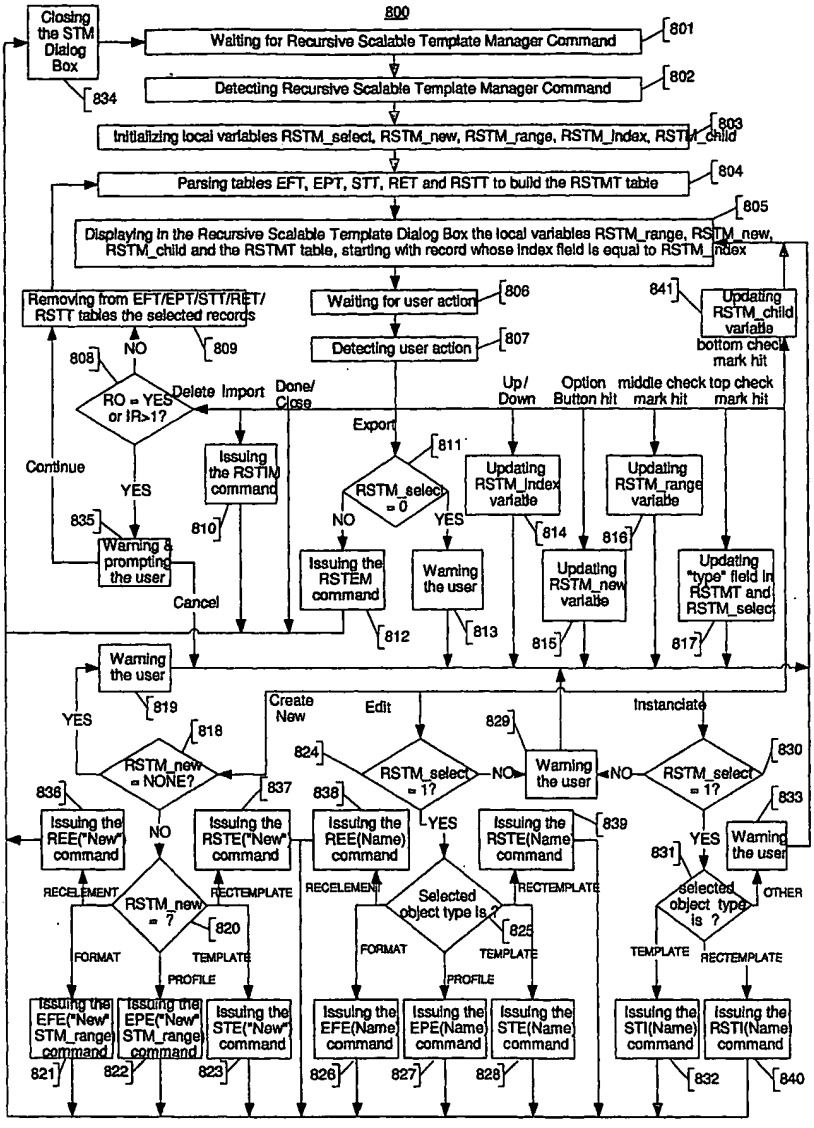

RSTIT
RSTIDT
RSTT
RSTDT
RET
STIT
STT
STDT
EFT
EPT
RE/RME
RSTI header
RSTI body
RSTI footer
STI Header
STI Body
STI Footer
STI 797
RSTI 730
Recursive element Descriptor RoC
EF/MEF
EP/MEP
Format illustrative range of cells
Profile illustrative range of cells

Fig. 7F


800
Closing the STM Dialog Box
834
Waiting for Recursive Scalable Template Manager Command
801
Detecting Recursive Scalable Template Manager Command
802
Initializing local variables RSTM_select, RSTM_new, RSTM_range, RSTM_index, RSTM_child
803
Parsing tables EFT, EPT, STT, RET and RSTT to build the RSTMT table
804
Displaying in the Recursive Scalable Template Dialog Box the local variables RSTM_range, RSTM_new, RSTM_child and the RSTMT table, starting with record whose index field is equal to RSTM_index
805
Removing from EFT/EPT/STT/RET/ RSTT tables the selected records
809
Waiting for user action
806
Detecting user action
807
841
Updating RSTM_child variable
bottom check mark hit
808
NO
RO = YES or IR>1?
Delete
Import
Done/ Close
Export
Up/ Down
Option Button hit
middle check mark hit
top check mark hit
Continue
YES
835
Warning & prompting the user
Cancel
Issuing the RSTIM command
810
811
RSTM_select = 0
NO
YES
Issuing the RSTEM command
812
Warning the user
813
Updating RSTM_index variable
814
Updating RSTM_range variable
816
Updating RSTM_new variable
815
Updating "type" field in RSTMT and RSTM_select
817
Warning the user
819
YES
Create New
Edit
Instanciate
818
RSTM_new = NONE?
824
RSTM_select = 1?
NO
829
Warning the user
NO
RSTM_select = 1?
830
838
Issuing the REE("New") command
NO
837
Issuing the RSTE("New" command
838
Issuing the REE(Name) command
YES
Issuing the RSTE(Name) command
839
YES
833
Warning the user
831
RECELEMENT
RSTM_new = ?
RECTEMPLATE
820
RECELEMENT
Selected object type is ?
RECTEMPLATE
825
selected object type is ?
OTHER
FORMAT
TEMPLATE
PROFILE
FORMAT
TEMPLATE
PROFILE
TEMPLATE
RECTEMPLATE
Issuing the EFE("New" STM_range) command
Issuing the EPE("New" STM_range) command
Issuing the STE("New" command
Issuing the EFE(Name) command
Issuing the EPE(Name) command
Issuing the STE(Name) command
Issuing the STI(Name) command
Issuing the RSTI(Name) command
821
822
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826
827
828
832
840

Fig. 8

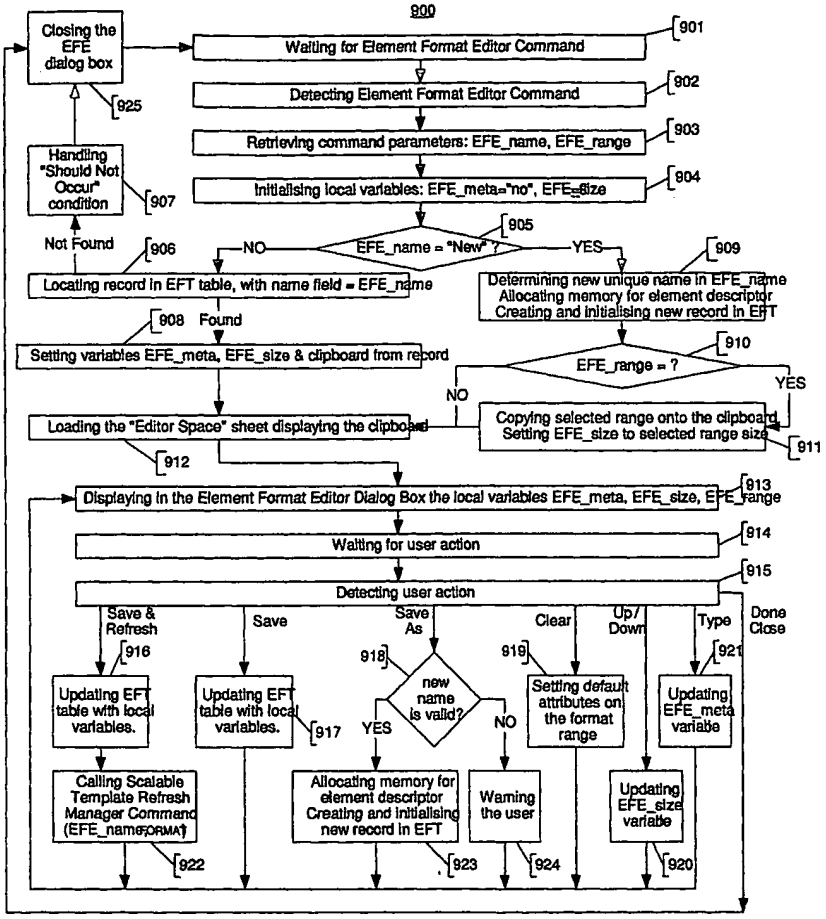

900
Closing the EFE dialog box
925
Waiting for Element Format Editor Command
901
Detecting Element Format Editor Command
902
Retrieving command parameters: EFE_name, EFE_range
903
Handling "Should Not Occur" condition
907
Initialising local variables: EFE_meta="no", EFE_size
904
905
Not Found
906
NO
EFE_name = "New" ?
YES
909
Locating record in EFT table, with name field = EFE_name
Determining new unique name in EFE_name
Allocating memory for element descriptor
Creating and initialising new record in EFT
908
Found
Setting variables EFE_meta, EFE_size & clipboard from record
910
EFE_range = ?
YES
NO
Loading the "Editor Space" sheet displaying the clipboard
Copying selected range onto the clipboard
Setting EFE_size to selected range size
911
912
913
Displaying in the Element Format Editor Dialog Box the local variables EFE_meta, EFE_size, EFE_range
914
Waiting for user action
915
Detecting user action
Save & Refresh
Save
Save As
Clear
Up/ Down
Type
Done Close
916
Updating EFT table with local variables.
Updating EFT table with local variables.
917
918
new name is valid?
YES
NO
919
Setting default attributes on the format range
921
Updating EFE_meta variable
Calling Scalable Template Refresh Manager Command (EFE_name.FORMAT)
922
Allocating memory for element descriptor
Creating and initialising new record in EFT
923
Warning the user
924
Updating EFE_size variable
920

Fig. 9

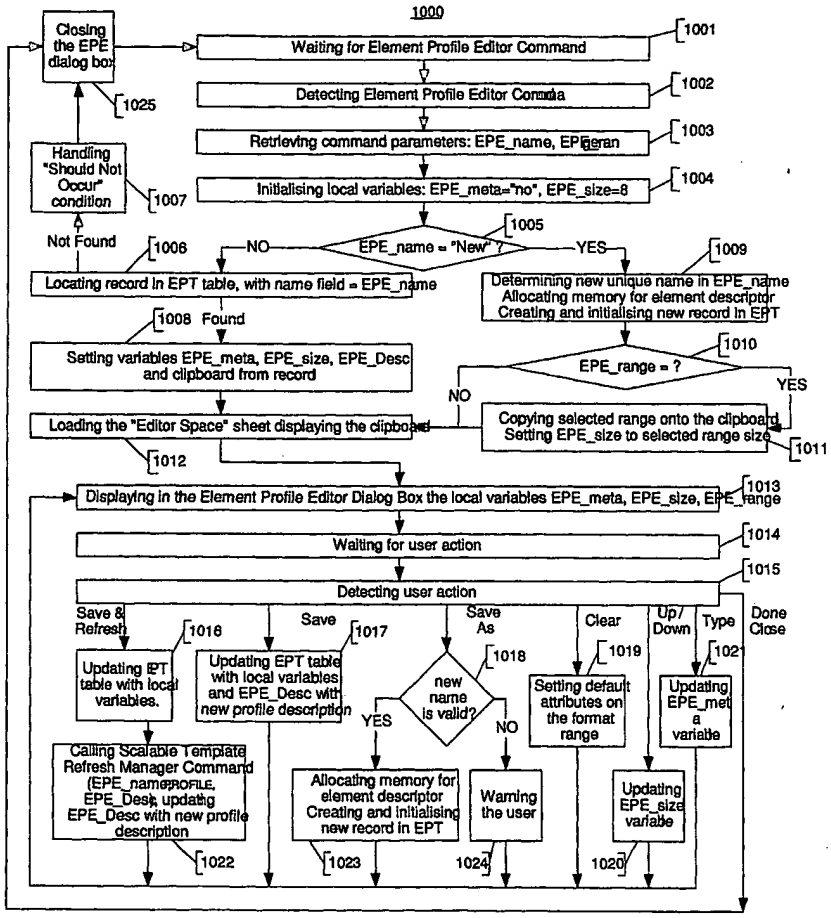

1000
Closing the EPE dialog box
1025
Waiting for Element Profile Editor Command
1001
Detecting Element Profile Editor Command
1002
Retrieving command parameters: EPE_name, EPE_range
1003
Handling "Should Not Occur" condition
1007
Initialising local variables: EPE_meta="no", EPE_size=8
1004
1005
EPE_name = "New" ?
NO
YES
Not Found
1006
Locating record in EPT table, with name field = EPE_name
1009
Determining new unique name in EPE_name
Allocating memory for element descriptor
Creating and initialising new record in EPT
1008 Found
Setting variables EPE_meta, EPE_size, EPE_Desc and clipboard from record
1010
EPE_range = ?
YES
NO
Loading the "Editor Space" sheet displaying the clipboard
Copying selected range onto the clipboard
Setting EPE_size to selected range size
1011
1012
Displaying in the Element Profile Editor Dialog Box the local variables EPE_meta, EPE_size, EPE_range
1013
Waiting for user action
1014
Detecting user action
1015
Save & Refresh
1016
Save
1017
Save As
1018
Clear
1019
Up/ Down
Type
1021
Done Close
Updating EPT table with local variables.
Updating EPT table with local variables and EPE_Desc with new profile description
new name is valid?
YES
NO
Setting default attributes on the format range
Updating EPE_meta variable
Calling Scalable Template Refresh Manager Command (EPE_name+PROFILE, EPE_Desk, updating EPE_Desc with new profile description
Allocating memory for element descriptor
Creating and initialising new record in EPT
Warning the user
Updating EPE_size variable
1022
1023
1024
1020

Fig. 10

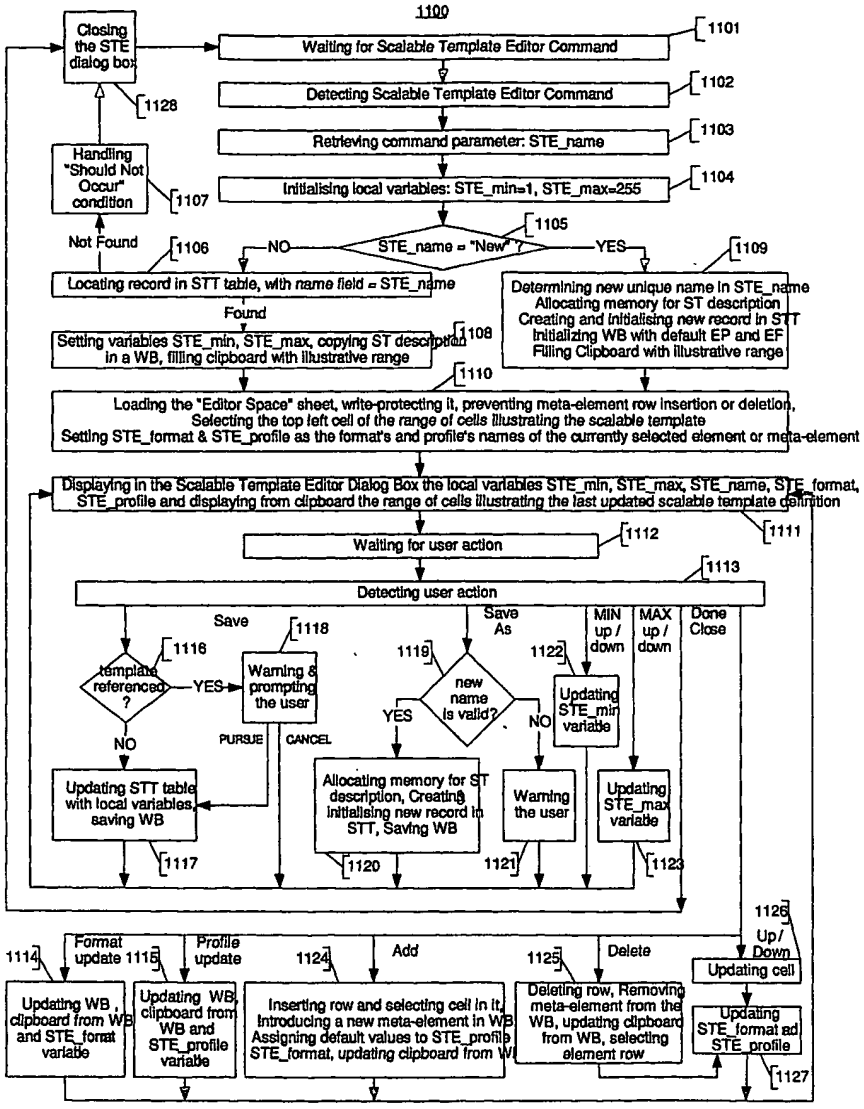

1100
Closing the STE dialog box
1128
Waiting for Scalable Template Editor Command
1101
Detecting Scalable Template Editor Command
1102
Retrieving command parameter: STE_name
1103
Handling "Should Not Occur" condition
1107
Initialising local variables: STE_min=1, STE_max=255
1104
1105
Not Found
1106
NO
STE_name = "New" ?
YES
1109
Locating record in STT table, with name field = STE_name
Found
Setting variables STE_min, STE_max, copying ST description in a WB, filling clipboard with illustrative range
1108
Determining new unique name in STE_name
Allocating memory for ST description
Creating and initialising new record in STT
Initializing WB with default EP and EF
Filling Clipboard with illustrative range
1110
Loading the "Editor Space" sheet, write-protecting it, preventing meta-element row insertion or deletion,
Selecting the top left cell of the range of cells illustrating the scalable template
Setting STE_format & STE_profile as the format's and profile's names of the currently selected element or meta-element
Displaying in the Scalable Template Editor Dialog Box the local variables STE_min, STE_max, STE_name, STE_format, STE_profile and displaying from clipboard the range of cells illustrating the last updated scalable template definition
1111
Waiting for user action
1112
1113
Detecting user action
Save
1118
Save As
MIN up / down
MAX up / down
Done Close
1116
template referenced ?
YES
Warning & prompting the user
1119
new name is valid?
1122
Updating STE_min variable
YES
NO
NO
PURSUE
CANCEL
Updating STT table with local variables, saving WB
Allocating memory for ST description, Creating initialising new record in STT, Saving WB
Warning the user
Updating STE_max variable
1117
1120
1121
1123
1126
Up / Down
Updating cell
1114
Format update
1115
Profile update
1124
Add
1125
Delete
Updating WB clipboard from WB and STE_format variable
Updating WB clipboard from WB and STE_profile variable
Inserting row and selecting cell in it, Introducing a new meta-element in WB, Assigning default values to STE_profile, STE_format, updating clipboard from WB
Deleting row, Removing meta-element from the WB, updating clipboard from WB, selecting element row
Updating STE_format ad STE_profile
1127

Fig. 11

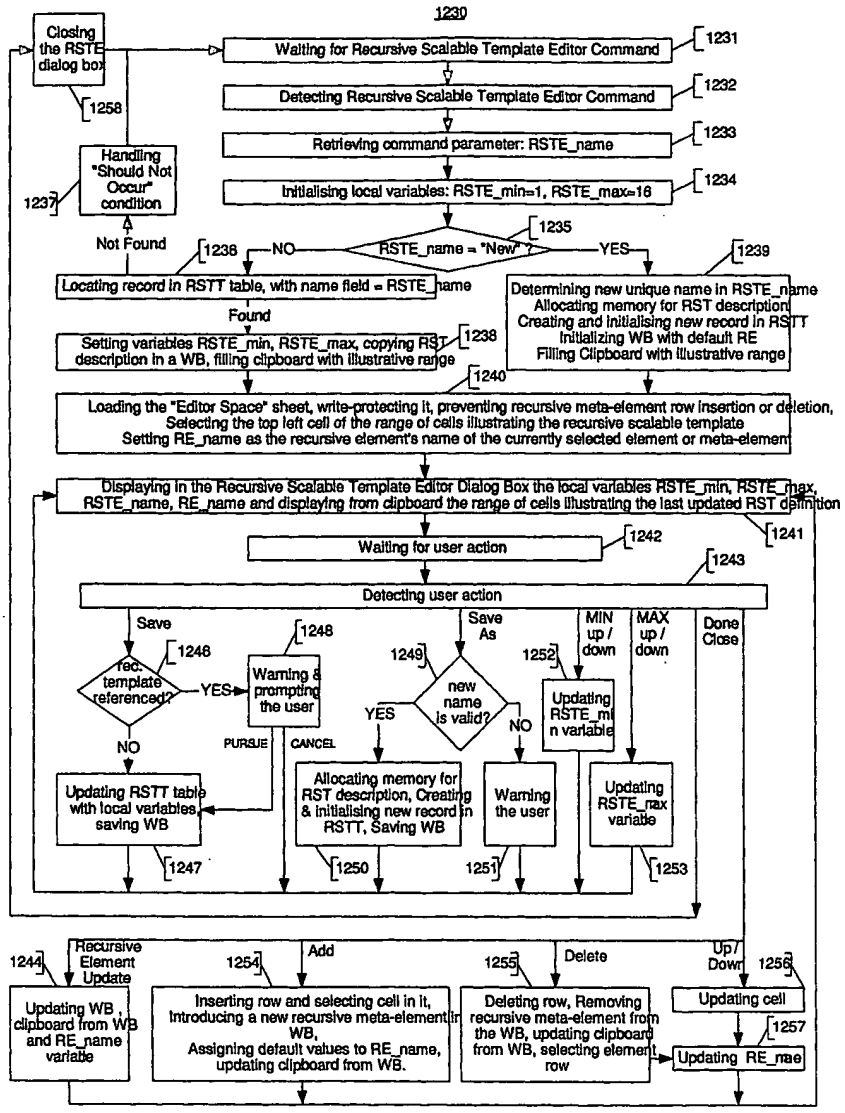

1230
Closing the RSTE dialog box
1258
Waiting for Recursive Scalable Template Editor Command
1231
Detecting Recursive Scalable Template Editor Command
1232
Retrieving command parameter: RSTE_name
1233
Initialising local variables: RSTE_min=1, RSTE_max=16
1234
Handling "Should Not Occur" condition
1237
Not Found
1235
RSTE_name = "New" ?
NO
YES
1238
1239
Locating record in RSTT table, with name field = RSTE_name
Found
Setting variables RSTE_min, RSTE_max, copying RST description in a WB, filling clipboard with illustrative range
1238
Determining new unique name in RSTE_name
Allocating memory for RST description
Creating and initialising new record in RSTT
Initializing WB with default RE
Filling Clipboard with illustrative range
1240
Loading the "Editor Space" sheet, write-protecting it, preventing recursive meta-element row insertion or deletion,
Selecting the top left cell of the range of cells illustrating the recursive scalable template
Setting RE_name as the recursive element's name of the currently selected element or meta-element
Displaying in the Recursive Scalable Template Editor Dialog Box the local variables RSTE_min, RSTE_max, RSTE_name, RE_name and displaying from clipboard the range of cells illustrating the last updated RST definition
1241
Waiting for user action
1242
1243
Detecting user action
Save
1246
rec. template referenced?
YES
NO
1248
Warning & prompting the user
PURSUE
CANCEL
Updating RSTT table with local variables, saving WB
1247
Save As
1249
new name is valid?
YES
NO
Allocating memory for RST description, Creating & initialising new record in RSTT, Saving WB
1250
Warning the user
1251
MIN up / down
1252
Updating RSTE_min variable
MAX up / down
Updating RSTE_max variable
1253
Done Close
1244
Recursive Element Update
Updating WB clipboard from WB and RE_name variable
1254
Add
Inserting row and selecting cell in it, introducing a new recursive meta-element in WB,
Assigning default values to RE_name, updating clipboard from WB.
1255
Delete
Deleting row, Removing recursive meta-element from the WB, updating clipboard from WB, selecting element row
Up/ Down
1256
Updating cell
1257
Updating RE_name

Fig. 12

Fig. 13A

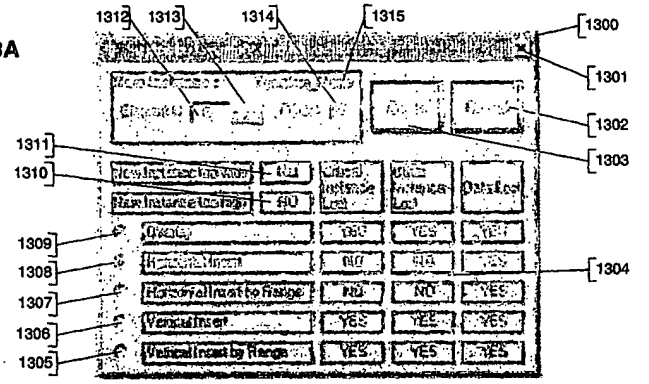


Fig. 13B

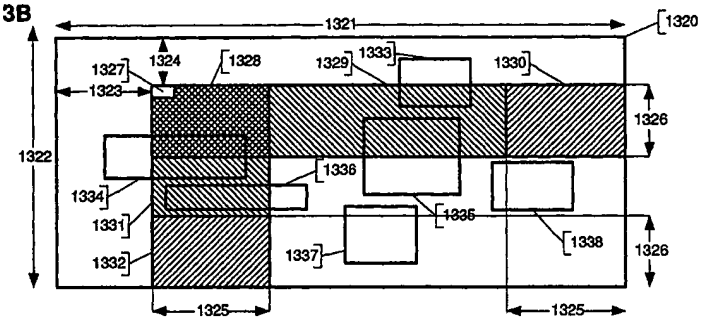
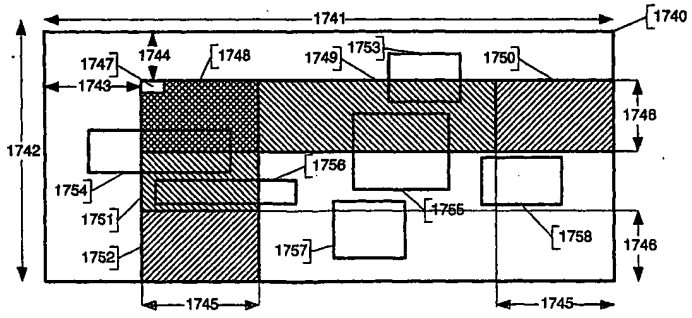


Fig. 17B



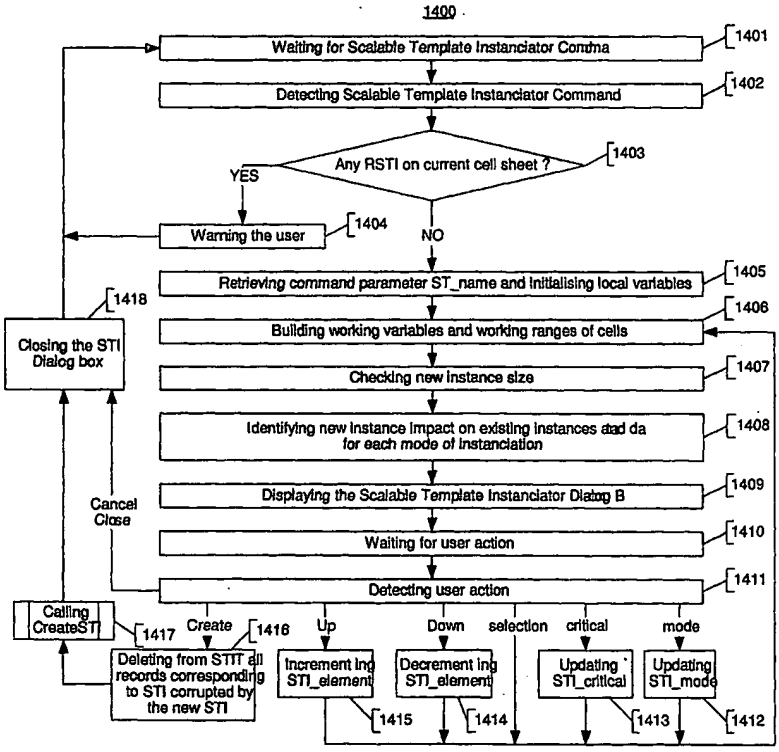

1400
Waiting for Scalable Template Instanciator Comma
1401
Detecting Scalable Template Instanciator Command
1402
Any RSTI on current cell sheet ?
1403
YES
NO
Warning the user
1404
Retrieving command parameter ST_name and initialising local variables
1405
Building working variables and working ranges of cells
1406
Checking new instance size
1407
Identifying new instance impact on existing instances and da for each mode of instanciation
1408
Displaying the Scalable Template Instanciator Dialog B
1409
Waiting for user action
1410
Detecting user action
1411
1418
Closing the STI Dialog box
Cancel Close
Calling CreateSTI
1417
Create
1416
Up
Down
selection
critical
mode
Deleting from STIT all records corresponding to STI corrupted by the new STI
Increment ing STI_element
Decrement ing STI_element
Updating STI_critical
Updating STI_mode
1415
1414
1413
1412

Fig. 14A

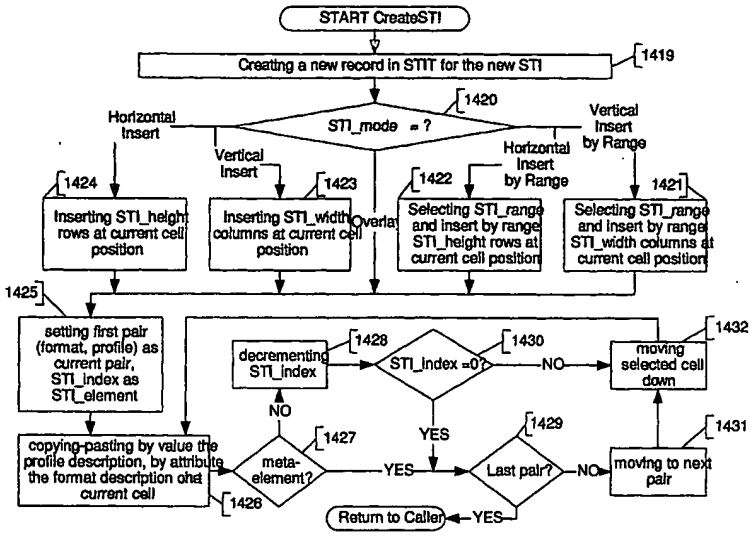


Fig. 14B

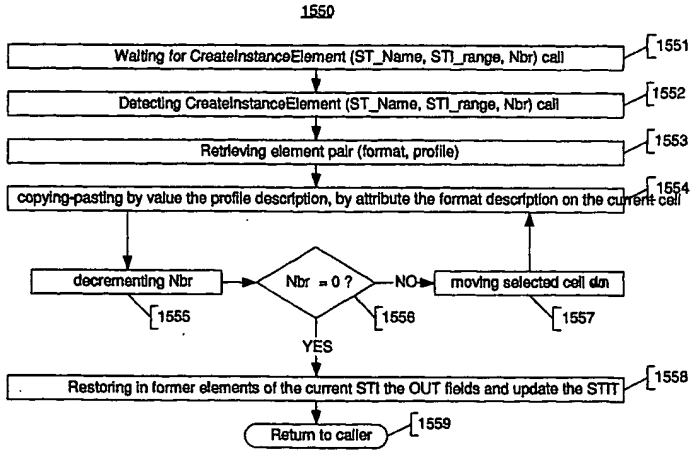


Fig. 15B

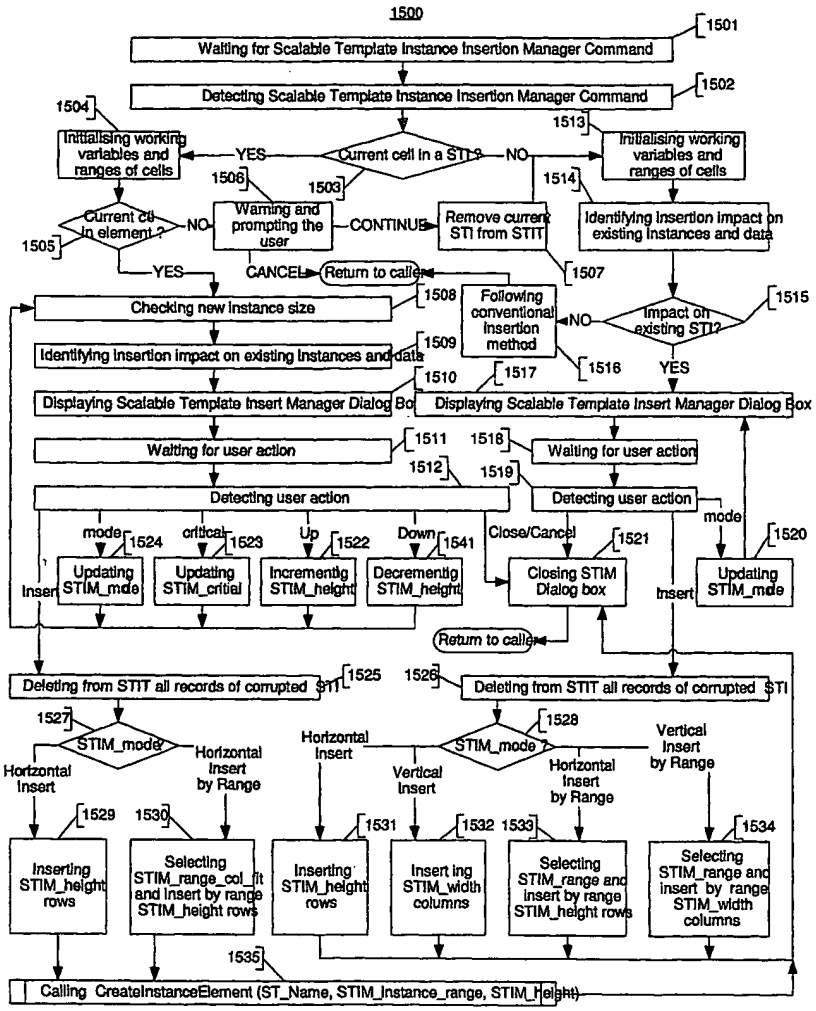

1500
Waiting for Scalable Template Instance Insertion Manager Command
1501
Detecting Scalable Template Instance Insertion Manager Command
1502
1504
Initialising working variables and ranges of cells
YES
Current cell in a STI ?
NO
1513
Initialising working variables and ranges of cells
1506
1503
1514
Current cell in element ?
NO
Warning and prompting the user
CONTINUE
Remove current STI from STIT
Identifying insertion impact on existing instances and data
1505
YES
CANCEL
Return to caller
1507
Checking new instance size
1508
Following conventional insertion method
NO
Impact on existing STI?
1515
Identifying insertion impact on existing instances and data
1509
1516
YES
Displaying Scalable Template Insert Manager Dialog Box
1510
1517
Displaying Scalable Template Insert Manager Dialog Box
Waiting for user action
1511
1518
Waiting for user action
1512
1519
Detecting user action
Detecting user action
mode
1524
critical
1523
Up
1522
Down
1541
Close/Cancel
1521
mode
1520
Insert
Updating STIM_mode
Updating STIM_critial
Incrementig STIM_height
Decrementig STIM_height
Closing STIM Dialog box
Insert
Updating STIM_mode
Return to caller
Deleting from STIT all records of corrupted STI
1525
1526
Deleting from STIT all records of corrupted STI
1527
STIM_mode?
Horizontal Insert
Horizontal Insert by Range
Horizontal Insert
1528
STIM_mode ?
Vertical Insert
Horizontal Insert by Range
Vertical Insert by Range
1529
1530
1531
1532
1533
1534
Inserting STIM_height rows
Selecting STIM_range_col_it and Insert by range STIM_height rows
Inserting STIM_height rows
Insert ing STIM_width columns
Selecting STIM_range and insert by range STIM_height rows
Selecting STIM_range and insert by range STIM_width columns
1535
Calling CreateInstanceElement (ST_Name, STIM_Instance_range, STIM_Height)

Fig. 15A

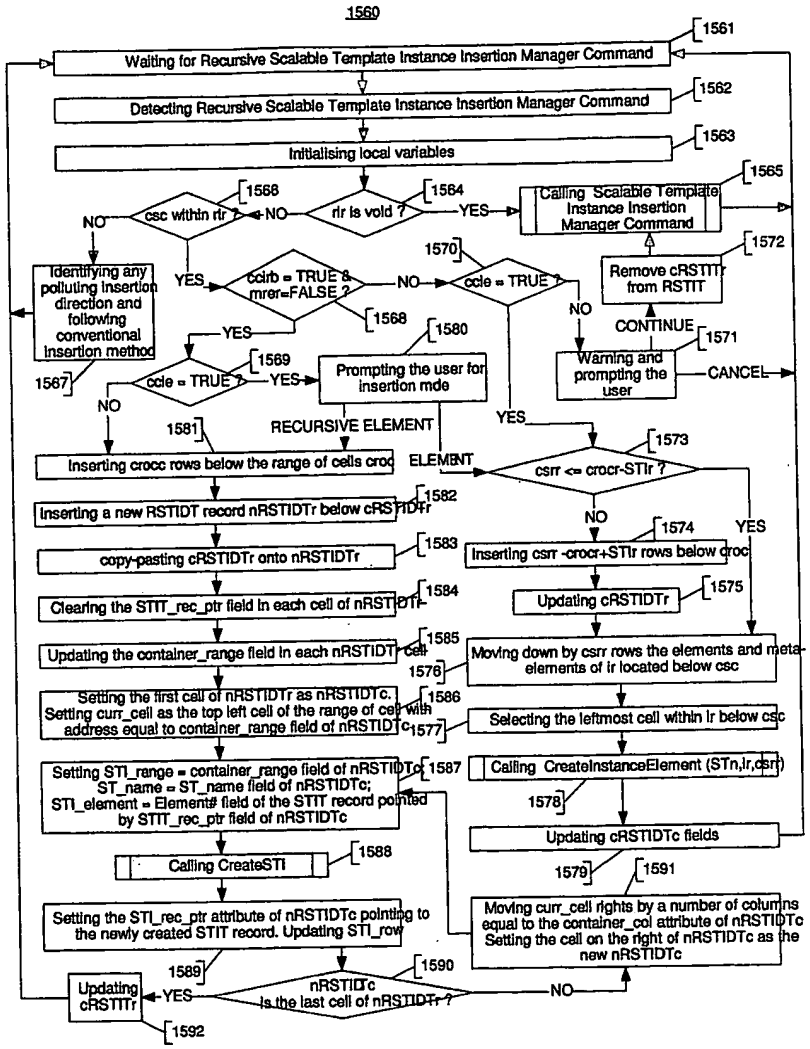

1560
1561
Waiting for Recursive Scalable Template Instance Insertion Manager Command
1562
Detecting Recursive Scalable Template Instance Insertion Manager Command
1563
Initialising local variables
1565
Calling Scalable Template Instance Insertion Manager Command
1564
rlr is void ?
YES
1566
csc within rlr ?
NO
NO
Identifying any polluting insertion direction and following conventional insertion method
1567
YES
ccirb = TRUE & mrer=FALSE ?
1568
NO
1570
ccle = TRUE ?
NO
1572
Remove cRSTITr from RSTIT
CONTINUE
1571
Warning and prompting the user
CANCEL
YES
1580
Prompting the user for insertion mde
1569
ccle = TRUE ?
YES
NO
1581
RECURSIVE ELEMENT
ELEMENT
YES
1573
csrr <= crocr-STIr ?
Inserting crocc rows below the range of cells croc
1582
Inserting a new RSTIDT record nRSTIDTr below cRSTIDTr
1583
copy-pasting cRSTIDTr onto nRSTIDTr
1584
Clearing the STIT_rec_ptr field in each cell of nRSTIDTr
1585
Updating the container_range field in each nRSTIDT cell
1586
Setting the first cell of nRSTIDTr as nRSTIDTc. Setting curr_cell as the top left cell of the range of cells with address equal to container_range field of nRSTIDTc
1587
Setting STI_range = container_range field of nRSTIDTc; ST_name = ST_name field of nRSTIDTc; STI_element = Element# field of the STIT record pointed by STIT_rec_ptr field of nRSTIDTc
1588
Calling CreateSTI
Setting the STI_rec_ptr attribute of nRSTIDTc pointing to the newly created STIT record. Updating STI_row
1589
1590
nRSTIDTc is the last cell of nRSTIDTr ?
YES
NO
Updating cRSTITr
1592
NO
1574
YES
Inserting csrr -crocr+STIr rows below croc
Updating cRSTIDTr
1575
1576
Moving down by csrr rows the elements and meta-elements of lr located below csc
1577
Selecting the leftmost cell within lr below csc
Calling CreateInstanceElement (STn,lr,csrr)
1578
Updating cRSTIDTc fields
1579
1591
Moving curr_cell rights by a number of columns equal to the container_col attribute of nRSTIDTc Setting the cell on the right of nRSTIDTc as the new nRSTIDTc

Fig. 15C

Fig. 16A

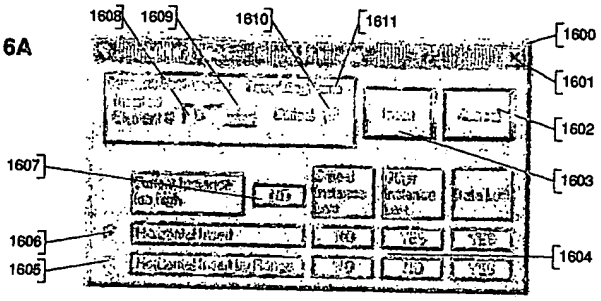


Fig. 16B

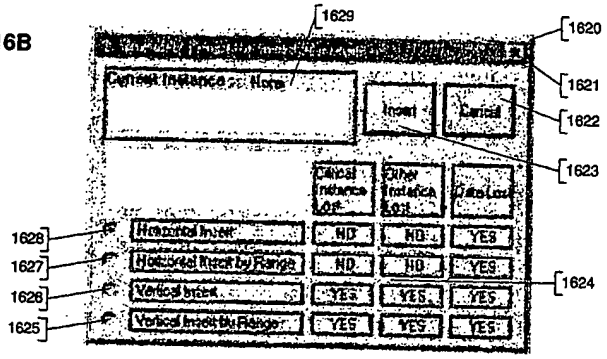
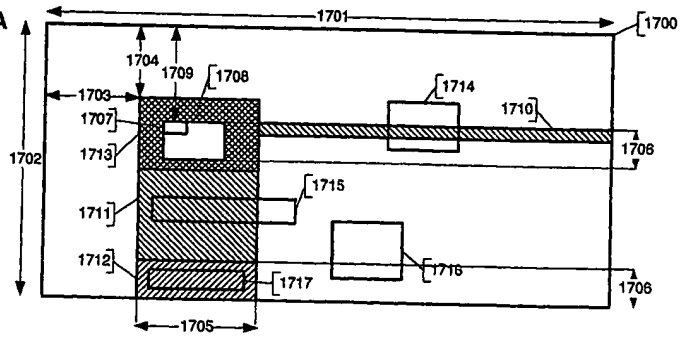


Fig. 17A



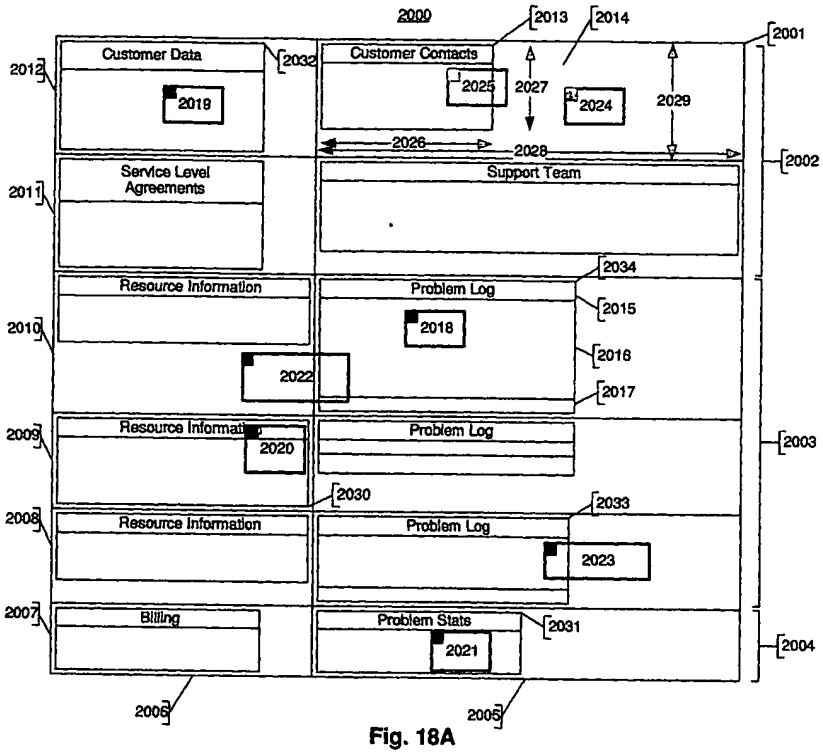


Fig. 18A

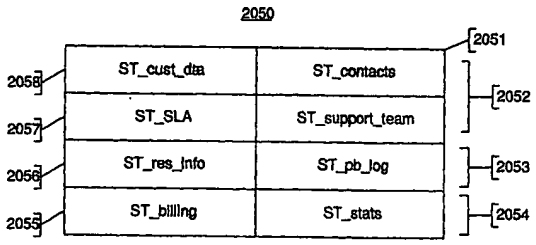


Fig. 18B

Fig. 19A

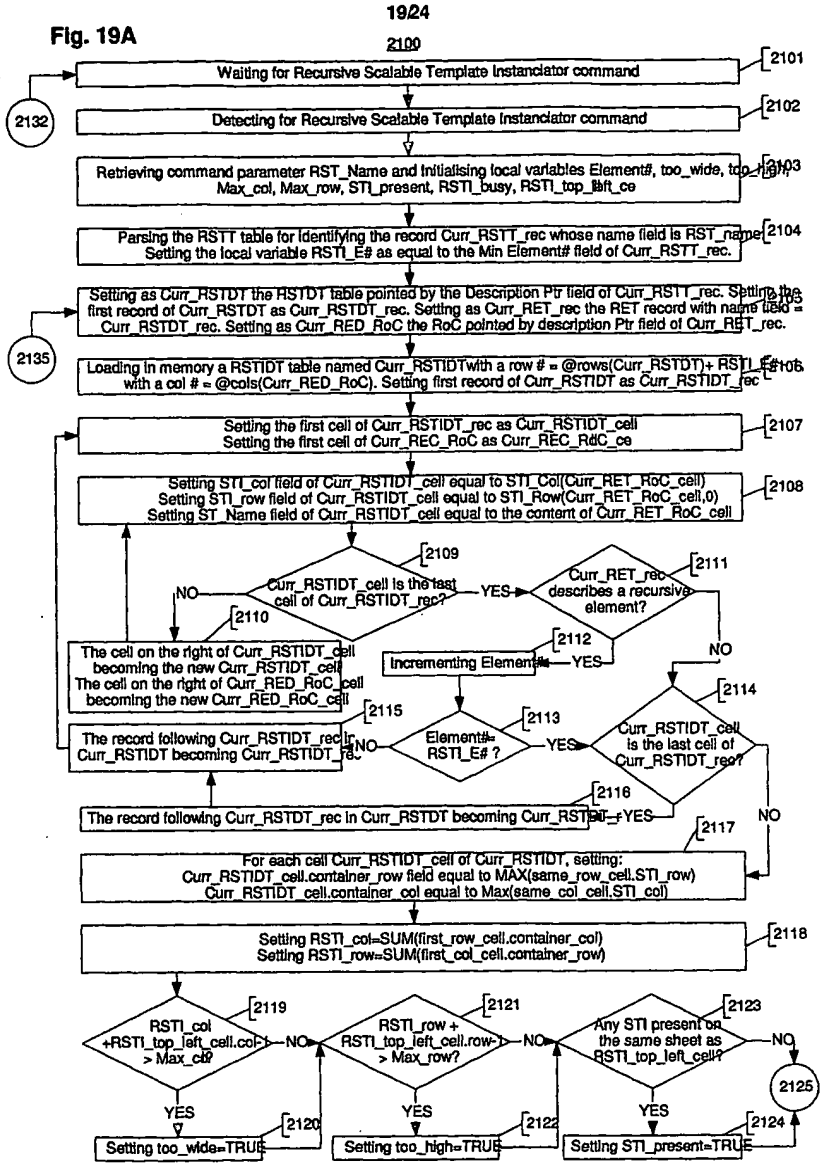
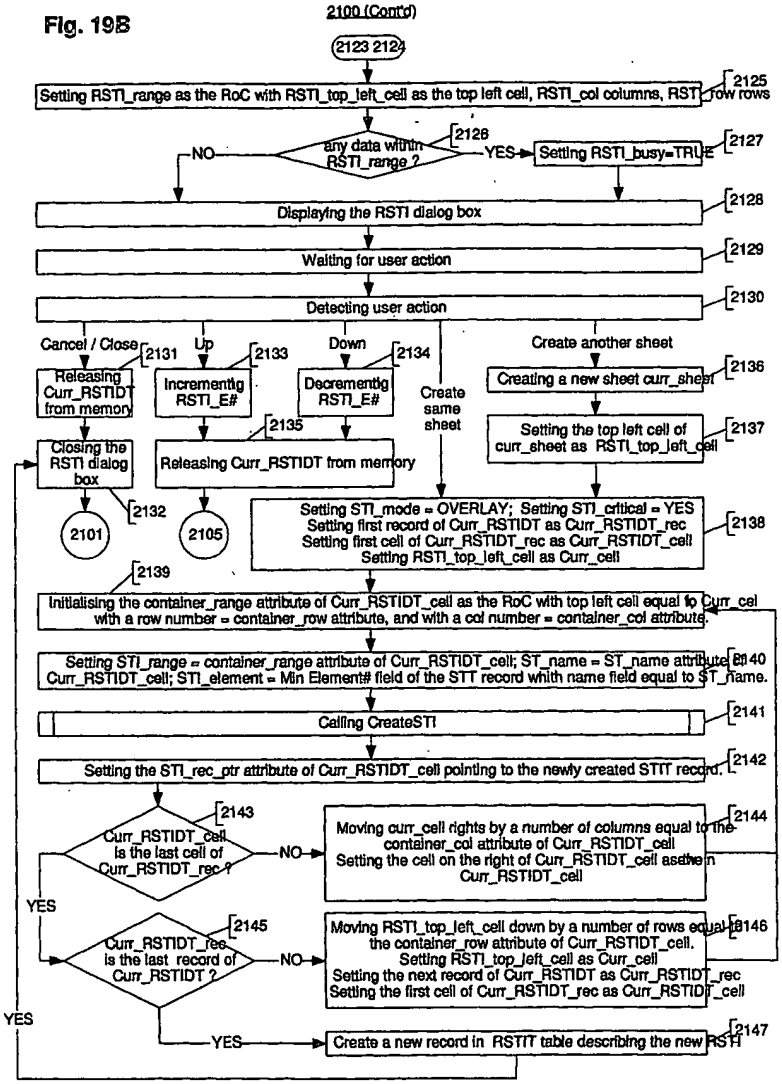

1924
2100
Waiting for Recursive Scalable Template Instanciator command
2101
Detecting for Recursive Scalable Template Instanciator command
2102
Retrieving command parameter RST_Name and initialising local variables Element#, too_wide, too_high, Max_col, Max_row, STI_present, RSTI_busy, RSTI_top_left_ce
2103
Parsing the RSTT table for identifying the record Curr_RSTT_rec whose name field is RST_name Setting the local variable RSTI_E# as equal to the Min Element# field of Curr_RSTT_rec.
2104
Setting as Curr_RSTDT the RSTDT table pointed by the Description Ptr field of Curr_RSTT_rec. Setting the first record of Curr_RSTDT as Curr_RSTDT_rec. Setting as Curr_RET_rec the RET record with name field = Curr_RSTDT_rec. Setting as Curr_RED_RoC the RoC pointed by description Ptr field of Curr_RET_rec.
2105
Loading in memory a RSTIDT table named Curr_RSTIDTwith a row # = @rows(Curr_RSTDT)+ RSTI_E#+1 with a col # = @cols(Curr_RED_RoC). Setting first record of Curr_RSTIDT as Curr_RSTIDT_rec
2106
Setting the first cell of Curr_RSTIDT_rec as Curr_RSTIDT_cell
Setting the first cell of Curr_REC_RoC as Curr_REC_RoC_ce
2107
Setting STI_col field of Curr_RSTIDT_cell equal to STI_Col(Curr_RET_RoC_cell)
Setting STI_row field of Curr_RSTIDT_cell equal to STI_Row(Curr_RET_RoC_cell,0)
Setting ST_Name field of Curr_RSTIDT_cell equal to the content of Curr_RET_RoC_cell
2108
Curr_RSTIDT_cell is the last cell of Curr_RSTIDT_rec?
2109
NO
YES
Curr_RET_rec describes a recursive element?
2111
2110
The cell on the right of Curr_RSTIDT_cell becoming the new Curr_RSTIDT_cell
The cell on the right of Curr_RED_RoC_cell becoming the new Curr_RED_RoC_cell
Incrementing Element#
2112
YES
NO
2114
2115
The record following Curr_RSTIDT_rec in Curr_RSTIDT becoming Curr_RSTIDT_rec
NO
Element#= RSTI_E# ?
2113
YES
Curr_RSTIDT_cell is the last cell of Curr_RSTIDT_rec?
2116
The record following Curr_RSTDT_rec in Curr_RSTDT becoming Curr_RSTDT_rec
YES
NO
2117
For each cell Curr_RSTIDT_cell of Curr_RSTIDT, setting:
Curr_RSTIDT_cell.container_row field equal to MAX(same_row_cell.STI_row)
Curr_RSTIDT_cell.container_col equal to Max(same_col_cell.STI_col)
Setting RSTI_col=SUM(first_row_cell.container_col)
Setting RSTI_row=SUM(first_col_cell.container_row)
2118
RSTI_col +RSTI_top_left_cell.col-1 > Max_col?
2119
NO
RSTI_row + RSTI_top_left_cell.row-1 > Max_row?
2121
NO
Any STI present on the same sheet as RSTI_top_left_cell?
2123
NO
2125
YES
YES
YES
Setting too_wide=TRUE
2120
Setting too_high=TRUE
2122
Setting STI_present=TRUE
2124

Fig. 19B


2100 (Cont'd)
2123 2124
Setting RSTI_range as the RoC with RSTI_top_left_cell as the top left cell, RSTI_col columns, RSTI_row rows
2125
any data within RSTI_range ?
2126
NO
YES
Setting RSTI_busy=TRUE
2127
Displaying the RSTI dialog box
2128
Waiting for user action
2129
Detecting user action
2130
Cancel / Close
Up
Down
Create another sheet
Releasing Curr_RSTIDT from memory
2131
Incrementig RSTI_E#
2133
Decrementig RSTI_E#
2134
Create same sheet
Creating a new sheet curr_sheet
2136
Setting the top left cell of curr_sheet as RSTI_top_left_cell
2137
2135
Releasing Curr_RSTIDT from memory
Closing the RSTI dialog box
2132
2101
2105
Setting STI_mode = OVERLAY; Setting STI_critical = YES
Setting first record of Curr_RSTIDT as Curr_RSTIDT_rec
Setting first cell of Curr_RSTIDT_rec as Curr_RSTIDT_cell
Setting RSTI_top_left_cell as Curr_cell
2138
2139
Initialising the container_range attribute of Curr_RSTIDT_cell as the RoC with top left cell equal to Curr_cel with a row number = container_row attribute, and with a col number = container_col attribute.
Setting STI_range = container_range attribute of Curr_RSTIDT_cell; ST_name = ST_name attribute of Curr_RSTIDT_cell; STI_element = Min Element# field of the STT record whith name field equal to ST_name.
2140
Calling CreateSTI
2141
Setting the STI_rec_ptr attribute of Curr_RSTIDT_cell pointing to the newly created STIT record.
2142
Curr_RSTIDT_cell is the last cell of Curr_RSTIDT_rec ?
2143
NO
Moving curr_cell rights by a number of columns equal to the container_col attribute of Curr_RSTIDT_cell
Setting the cell on the right of Curr_RSTIDT_cell as the in Curr_RSTIDT_cell
2144
YES
Curr_RSTIDT_rec is the last record of Curr_RSTIDT ?
2145
NO
Moving RSTI_top_left_cell down by a number of rows equal to the container_row attribute of Curr_RSTIDT_cell.
Setting RSTI_top_left_cell as Curr_cell
Setting the next record of Curr_RSTIDT as Curr_RSTIDT_rec
Setting the first cell of Curr_RSTIDT_rec as Curr_RSTIDT_cell
2146
YES
YES
Create a new record in RSTIT table describing the new RSTI
2147

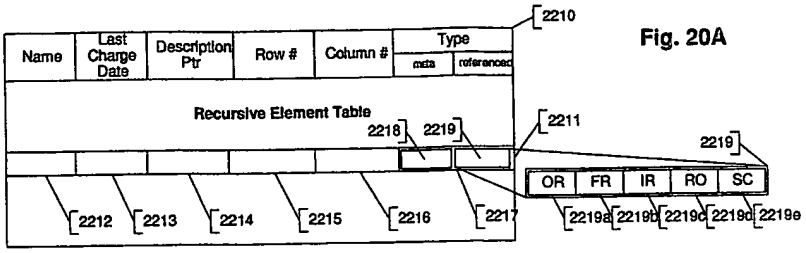


Fig. 20A

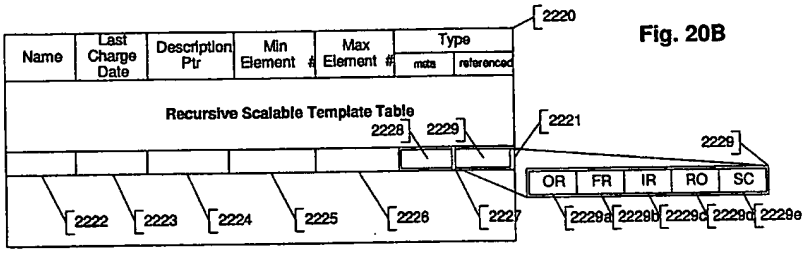


Fig. 20B

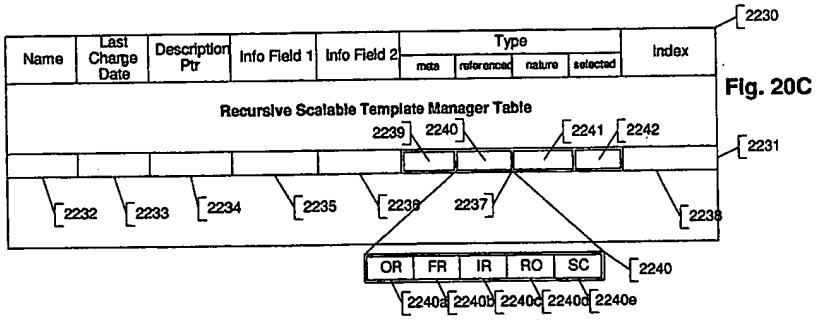


Fig. 20C

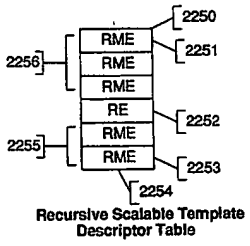


Fig. 20D

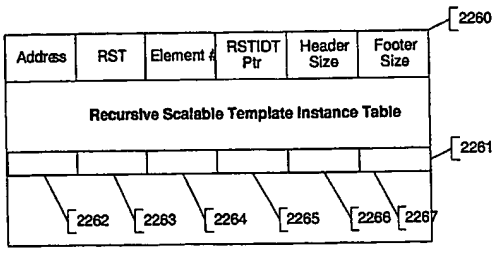


Fig. 20E

Fig. 21A

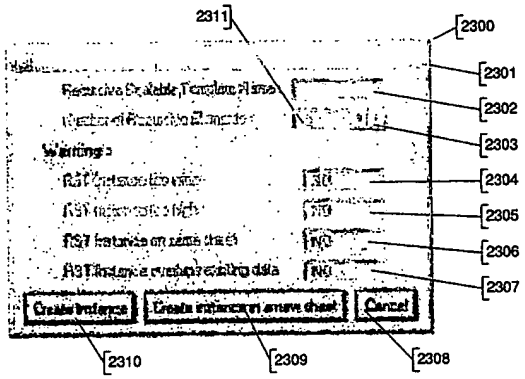
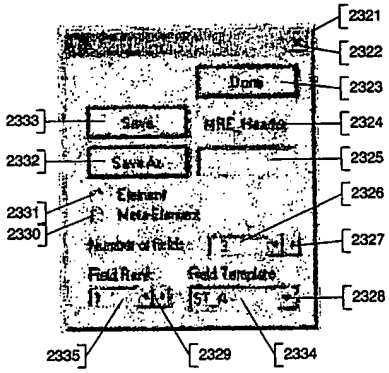


Fig. 21B



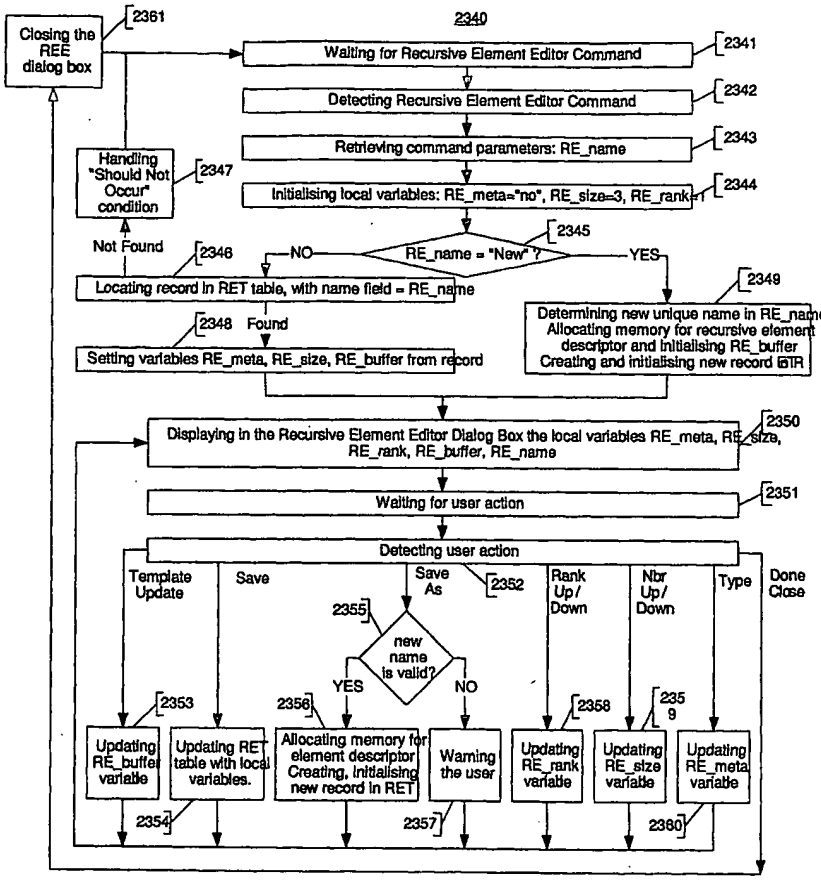

Closing the REE dialog box
2361
2340
Waiting for Recursive Element Editor Command
2341
Detecting Recursive Element Editor Command
2342
Retrieving command parameters: RE_name
2343
Handling "Should Not Occur" condition
2347
Initialising local variables: RE_meta="no", RE_size=3, RE_rank=1
2344
Not Found
2345
NO
RE_name = "New" ?
YES
2346
Locating record in RET table, with name field = RE_name
2349
Determining new unique name in RE_name
Allocating memory for recursive element descriptor and initialising RE_buffer
Creating and initialising new record in RET
2348
Found
Setting variables RE_meta, RE_size, RE_buffer from record
2350
Displaying in the Recursive Element Editor Dialog Box the local variables RE_meta, RE_size, RE_rank, RE_buffer, RE_name
2351
Waiting for user action
Detecting user action
Template Update
Save
Save As
2352
Rank Up/ Down
Nbr Up/ Down
Type
Done Close
2355
new name is valid?
YES
NO
2353
2356
2358
2359
Updating RE_buffer variable
Updating RET table with local variables.
Allocating memory for element descriptor Creating, initialising new record in RET
Warning the user
Updating RE_rank variable
Updating RE_size variable
Updating RE_meta variable
2354
2357
2360

Fig. 21C

Fig. 22A

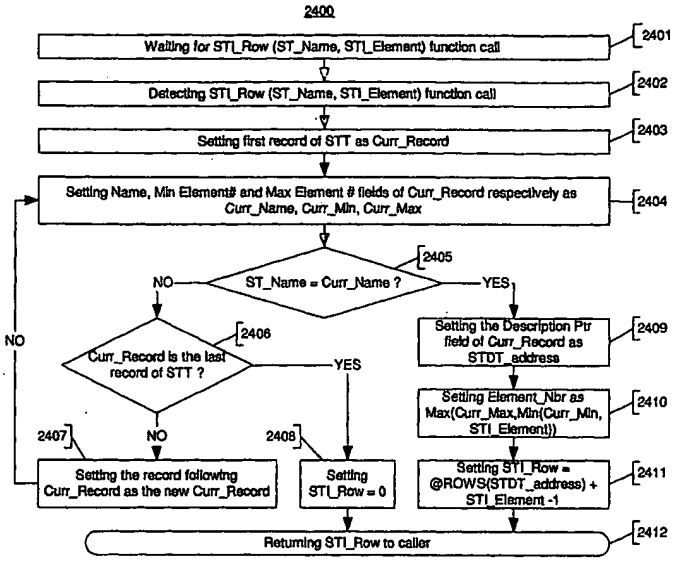
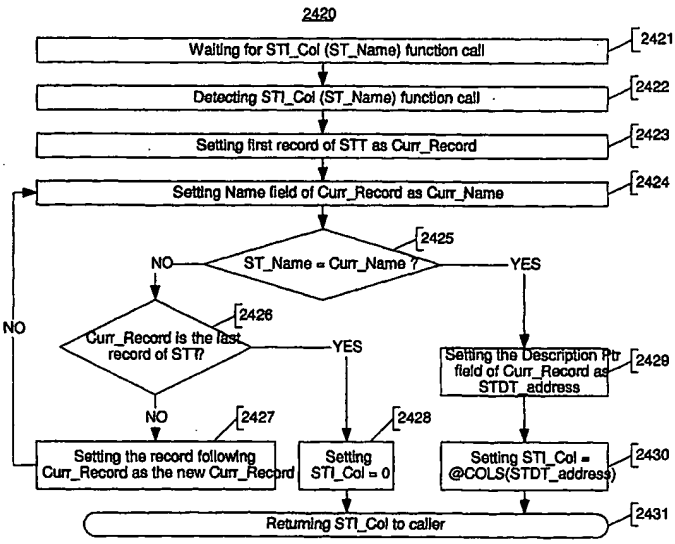


Fig. 22B



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